

Remarks

Claims 51-64, 71-84, 91-94 and 99 remain in the application.

The claimed invention are fibrous nonwoven mats useful as the scored and folded vertical webs spanning between an exposed mat and a backer mat in a compressible ceiling tile as disclosed in published U. S. Patent Application No. 20020020142 filed April 23, 2001, including the ability to, after being scored, folded, and compressed, to spring back to the original shape and orientation, the novel features of the fibrous nonwoven mats being the combination of components, limitations of the components and limitations on the basis wt and thickness of the fibrous nonwoven mats that produce a novel combination of properties, a combination of properties that permit the fibrous nonwoven mats to perform in superior manner when scored and used as the collapsible webs in compressible ceiling tile. The fibrous nonwoven mats have a basis weight in the range of 2.3 to about 2.6 lbs./100 sq. ft., a thickness in the range of about 35(claim 99) or 38(rest of the claims) mils to about 48 mils and are comprised of a blend of fibers comprising at least about 88 wt. percent and up to about 92 wt. percent of glass fibers having diameters in the range of about 13 to about 17.5 microns and lengths in the range of about 0.7 to about 1.1 inches, and about 8 to about 12 wt. percent of polymer fibers selected from a group consisting of polyester, polypropylene, nylon, PBT, polyacrylonitrile and polybenzimidazole, often polyester fibers, the blend of fibers bound together with about 25 +/- 5 wt. percent and of a particular type of binder. The claimed mats have excellent flame resistance and excellent and unexpected tensile strength, flex and recovery properties after scoring and folding, the mat passing the National Fire Protection Association's (NFPA) Method #701 Flammability Test as well as critical tensile strength and a Taber Stiffness of at least about 50, properties applicants discovered to be essential for the mat to be used as the collapsible web dividers in the ceiling tile of the type described in U.S. Published Patent Application No. 20020020142. As pointed out in the Summary section of the specification, these properties are unique and unexpected in nonwoven mats containing a majority of glass fibers bound together with an organic binder. Also, as pointed out in the Jaffee Declaration, Jaffee being an expert in nonwoven mat technology, being the inventor or co-inventor of 11 US patents, see Exhibit A enclosed, and being aware of the contents of the references cited by the Examiner, made more than 100 different mats containing many different combinations of different fibers and different binders before a mat

composition was tried that produced a mat that met the properties required for a mat to be used in the ceiling tile described above. Once that breakthrough was achieved, then ranges of variations, including those of the Examples set forth in the specification, were found that also met the requirements of the ceiling tile, and some combinations of variables produced mats having the better properties for this use than others although many could be used.

An example of a ceiling tile of the type described in U.S. Published Patent Application No. 20020020142, this ceiling tile sample having nonwoven mat dividers 52 spanning an outer sheet 54 and a backing mat 56, the mat dividers being scored and functioning to fold to allow the ceiling tile to be compressed or collapsed to save space for packaging and shipping. The presently claimed mats are suitable for the scored and folding dividers 52 in this type of ceiling tile. Also presented is a Declaration by the inventor, one having more than ordinary skill in the nonwoven mat art. As taught in U.S. Published Patent Application No. 20020020142, "The dividers [52], on the other hand, while preferably being made of fiberglass, could be made of a carbon fiber mat, some papers, cardboards, woven materials, films, or combinations thereof, with the important feature being that they have some predetermined modulus of resiliency, similar to the specific materials identified above, which allows them to be folded but remain resilient. If the materials are to be creased to define fold lines as discussed above in connection with fiberglass material, it is important that the material retain the modulus of resiliency after having been creased, which, of course, is true with fiberglass or carbon fiber materials." and "As mentioned, numerous materials might have applicability in the present invention, but in the preferred mode, the connector sheet and the dividers are made of the same material, which is a fiberglass mat made by Johns-Manville Corporation and the mat may be one designated No. 5802 or one designated No. 5803 by Johns-Manville." The 5802 is a 120 g/m.sup.2 mat composed of 10% PET/65% 16-micron glass/25% MF. The 5803 is a 100 g/m mat composed of 12% PET/68% 16-micron glass/20% MF. MF is an abbreviation for melamine formaldehyde resin, which exhibits the characteristics of a thermoset resin. PET is an abbreviation for a polyethylene terephthalate. Dividers made from either of the 5802 or 5803 material have the ability to expand with little or no addition of heat after having been creased and folded as described previously and after having been fully compressed. A more complete description of the Johns-Manville products and related products can be found in U.S. Pat. Nos. 5,840,413, 5,942,288, and 5,972,434, which are herein incorporated by reference. " The ceiling tile of U.S.

Published Patent Application No. 20020020142 is a commercial product as shown by Exhibit 1 enclosed.

Claims 82-84, 91-94 and 99 stand rejected under 35 USC 112, second paragraph, as being indefinite because of the term "comprising a blend of fibers suitable for use ——— as described in U.S. Patent Application No. 20020020142 filed April 23, 2001," the Examiner stating that claims may not incorporate, or incorporate by reference, another publication, but once again cited no statute, rule, or case law to support this statement and rejection. This rejection is traversed for the following reasons.

1) The second paragraph of 35 USC 112 states, "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." While the term "compressible ceiling tile" used in claim 51 could be generic and might include more than one kind of ceiling tile whereas the compressible ceiling tile described in a specific patent or published patent application is more distinct and more particularly points out what is meant than using a generic name. Even if applicants had used "ceiling tile", definitely a generic term that includes several different types of ceiling tile, the Examiner most likely would not have rejected the claim as being indefinite. There has to be something wrong with rejecting something that much more particularly points out and more distinctly claims something than if it is described by a generic term, don't you agree.

2) Apparently, if the description of the compressible ceiling tile in published patent application No. 200220020020142 filed April 23, 2001, had been added to claims 82, 91 and 99 by amendment, these claims would not have been rejected under 35 USC 112, second paragraph. That a patent or published patent application is or should be a full, clear, concise and exact description of something goes without question because that is required by 35 USC 112, first paragraph, and the Examiner did not reject these claims based on a belief that the published patent application at issue did not describe compressible ceiling tile in the manner required by 35 USC 112. Note the use of the term "concise" in 35 USC 112. This is evidence that the legislators who drafted and voted for this statute intended that no unnecessary verbege should be in the patent application, including the claims. A patent and published US patent applications are permanent documents and are readily accessible to both patent examiners and those of ordinary skill in the art. Therefore, it makes perfect sense, and complies with the wording

and wishes of the legislature who established 35 USC 112 as law, to incorporate long descriptions of things into the specification, including the claims, so long as what is incorporated meets the requirements of 35 USC 112.

3) The matter incorporated into the claim is not essential, but does add to the definiteness of the claim because the final test of whether something works in a particular application, such as a compressible ceiling tile of the type described in the published patent application at issue, is to try it and see if it works. There are a limited number of known tests and resultant properties that can be used to try to define the requirements, but they don't always guarantee that the product will work in that application, but if the products, in this case fibrous mats, do actually work in that application, product(s), that can be a further distinctness that is only defined by the fact that they perform satisfactorily. Therefore, such a statement in a claim that the claimed article is suitable for a specific application is not merely a statement of use, but instead incorporates characteristics of the article that might not be described otherwise. Such is not indefinite because any article in question can simply be tried in the application and if it does perform satisfactorily, as is the case here, it falls within the claim if it meets the other limitations of the claim. But, if the article in question does not perform satisfactorily, as is the case with the mats disclosed in Jaffee '846, it does not fall within the claim.

For these reasons applicants believe that the claims are definite and meet the requirements of 35 USC 112, second paragraph, and respectfully request the Examiner to withdraw this rejection and to allow all of the claims.

Claims 51-64, 71-84, 91-94 and 99 stand rejected under 35 USC 103 as being unpatentable over Jaffee in view of Arkens. The Examiner stated that it would have been obvious, in the sense of 35 USC 103, to have replaced the binder used by Jaffee with the binder taught by Arkens et al because both references involve fibrous mats and for the motivation of achieving a heat resistant mat without formaldehyde. This rejection is traversed for the following reasons:

1) The claimed invention is based on the discovery of a combination of mat properties, compositions and mat parameters for a mat that provides superior performance, after being scored and folded, in a unique compressible ceiling tile described in Published Pat. Application No. 2002/0020142, and also illustrated in Exhibit 1, and the mat having

properties, after scoring and folding, unexpected by the inventor in view of the composition and parameters. The issue is whether the combined teachings of Jaffee '876, Arkens et al make the claimed mats, and their properties after scoring and folding, obvious to one of ordinary skill in the art. They certainly weren't obvious to the present joint inventor Jaffee, the same Jaffee of Jaffee '876 patent cited in this rejection. The reasons being, as shown in paragraphs 1, 2 and 4a of the Jaffee 37 CFR 1.132 Declaration filed August 23, 2006. Further, Jaffee, who can be considered an expert in glass fiber nonwoven mat field, ran more than 100 trials of different compositions and mat parameters taking more than 54 days to discover the claimed mats. While the Jaffee 1.132 Declarations may not be conclusive evidence of non-obviousness, they certainly are strong evidence of non-obviousness.

2) Applicants believe that the Examiner has erred by either misreading or misunderstanding the references, or has fallen into hindsight reconstruction using applicants own disclosure as a roadmap in making the rejection under 35 USC 103a, an improper process for rejecting under 35 USC 103a, see American Medical Systems, Inc. v. Medical Engineering Corp., 26 USPQ 2d 1081, 1091, 1992, or as an instruction manual or template to piece together teachings of prior art to render the claims obvious, see In re Fritch, 23 USPQ 2d 1780, 1783, 1992, Ex Parte Alexander, 86 USPQ 2d, p 1120-1122, USPTO Board of Patent Appeals and Interferences, Appeal No. 2007-2693, November 30, 2007. Obviousness, in the sense of 35 USC 103a, requires a suggestion of all the elements of a claim, (CFMT, Inc. v. Yieldup Int'l. Corp., 349 F. 3d 1333, 1342, 68 USPQ 2d 1940 [Fed Cir. 2003] and a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does, KSR Int'l. Co. v. Teleflex Inc., 127 S. Ct. 1727, 82 USPQ2d 1385 (2007).

3) The Examiner states that it would have been obvious to one of ordinary skill in the art to have increased the basis weight of the mats taught by Jaffee to fall in the range of 2.3 to about 2.6 lbs./100 sq. ft. and to increase the thickness to a thickness in the range of 38 to 48 mils to meet desired properties, but the Examiner fails to show why one of ordinary skill would want to do so to make a mat for scoring and folding. Such a mat would be more expensive to make and ship and the Examiner has not shown that the properties needed for use as the scored and folded collapsible web in the unique compressible ceiling tile described in U.S. Published Pat. Application No. 2002/0020142, or for any other application.

4) The Examiner states that Jaffee's teaching in the '846 patent that certain of his mats could be heated and pleated and hot pressed, see Example 5 of Jaffee '846, to produce a variety of composites in Example 5 of Jaffee '846 is a teaching that such mats would be suitable for scoring and folding for the collapsible web in the unique compressible ceiling tile disclosed in U.S. Published Pat. Application No. 2002/0020142. There is no basis for this allegation. The mat is not heated to make the binder plastic before scoring and folding to make the collapsible web. Heating and pleating, and hot pressing are completely different processes than scoring and folding. Scoring damages, breaks, fibers on the surface portion of the mat whereas heating and pleating and hot pressing do not. Further, Jaffee did not use the word "composites" in Example 5, but instead taught that the mats of this Example could be hot pressed to form shapes that would retain their shape after cooling to make performs for molding fiber reinforced plastic parts. The unique compressible ceiling tiles of U.S. Published Pat. Application No. 2002/0020142 are not plastic parts. Fiber reinforced plastic parts mean fiber reinforced polymer parts to one of ordinary skill in the art and fiber performs are typically used to make such parts.

5) The Examiner states that Jaffee '846 teaches a mat in Example 2 (not part of the Jaffee '846 invention, but rather a control mat) that has a thickness of only 31 mils and a stiffness of 45, and even though Jaffee '846 teaches away from this stiffness or a higher stiffness for a facer mat, it would have been obvious to one of ordinary skill to have increased the stiffness for other applications, but the Examiner has not shown that it was known in the art that such a mat was needed or needed for the collapsible web in the unique ceiling tile disclosed in U.S. Published Pat. Application No. 2002/0020142. The invention mats of Jaffee '846 had a stiffness that was substantially lower than 45, e.g. a stiffness of only 33 which Jaffee taught was important, see col. 6, lines 20-22. The Jaffee reference also lead the skilled artisan to mats having a basis wt. in the range of about 1.8 to about 2.2 lbs/100 sq. ft. and points towards about 2.1 lbs/100 sq. ft., see col. 2, lines 30-33. This teaching also leads the skilled artisan away from the claimed invention. The Examiner seems to urge that 2.2 lbs./100 sq. ft. is close to 2.3 lbs./100 sq. ft. and therefore increasing the basis weight of the mats above that taught by Jaffee would be obvious in the sense of 35 USC 103, but in doing so the Examiner apparently overlooks the teachings in Jaffee that actually teach away from increasing the basis weight of his mats. The mats of the claimed invention have a basis weight in the range of about of about 2.3 to about 2.6 lbs/100 sq. ft., and the mats of claims 82 and 84

have basis weights significantly higher than 2.3 lbs/100 sq. ft. Basis weight of mat of same or similar composition affects mat thickness and stiffness with higher basis weights producing greater thickness and higher stiffness. Since Jaffee teaches greater flexibility is desirable, less stiffness, is desired, Therefore, Jaffee clearly teaches away from the basis weights of the claimed mats. The position taken by the Examiner in view of the clear teachings of the Jaffee '846 reference is further evidence that the rejection is an **improper hindsight rejection**.

6) Jaffee's invention deals with a very different problem, how to make a fibrous mat that would perform better as a facer on gypsum wall board than the prior art mats described in his Examples 1 and 2, particularly having improved flexibility, see col. 2, line 6. Jaffee teaches a mat that does perform better than the prior art mats because of having more flexibility, lower stiffness (90 degree bend stiffness) because of having a thermoplastic cross linkable vinyl chloride acrylate copolymer binder, see col. 1, line 62 through col. 2, line 37 and Example 4. Mats of this type could be thermoformed, i.e. heated to a plastic state and then formed (hot pressed) into a desired shape, such as pleats, that would be locked in that shape when the thermoplastic binder cooled and hardened. The binder could also contain up to 10 wt. percent of a stearylated melamine to increase strength and water reppelancy, see col. 6, lines 58-60.

7) Since none of the mats of Jaffee's invention contained any formaldehyde, there would have been no motivation for the skilled artisan to have looked to Arkens et al for improving Jaffee's mats and furthermore there is nothing in the teachings of Arken et al that suggests that their binder would be superior than the binder taught by Jaffee in mats for gypsum wall board facers. Arkens et al teach binders for mats for insulation facers or subjected to hot asphalt at 150-250 deg. C. while the mat is in tension in roofing manufacturing applications, or in printed circuit boards, whereas the mats of Jaffee are not taught for such applications or conditions. Note that Arkens et al teaches and stresses tensile strengths, dry and after soaking in water and heat resistance which is the ability of the mat to withstand tension at elevated temperatures, such as being impregnated or coated with hot asphalt while the mat is in tension, and also teaches away from a stiffer mat, see col. 1, lines 35-50. There is no teaching reasonable suggestion(s) in Arkens that would lead one of ordinary skill in the art to modify the teachings of Jaffee '846 to make the claimed mats, no teaching or suggestion of making the mat thicker, stiffer, etc., or that by doing so would produce a superior collapsible

web for the compressible ceiling tile disclosed in U.S. Published Pat. Application No. 2002/0020142. The position taken by the Examiner in view of the clear teachings of the Arkens reference is further evidence that the rejection is an improper hindsight rejection.

8) The most reasonable place to look for teachings to solve the problem solved by the claimed invention would be in the publications for compressible ceiling tiles and in any patents covering the mats previously used for the collapsible webs or dividers in those compressible ceiling tiles. When one does that and further pointed out in the Jaffee Declaration filed earlier, one of ordinary skill in the art is not directed to the mats claimed here. Failing to use what is taught by the inventors in the U.S. Published Pat. Application No. 2002/0020142 is further evidence that the current rejection is an improper hindsight rejection.

9) Failing to give weight to properties recited in article claims is reversible error, particularly when evidence to the contrary has been presented. It is improper to ignore or give little weight to property limitations in the claims when the composition of the item having the properties is different than reasonably taught by the references, and especially when the applicant is claiming the properties are critical to a particular different application and/or are unexpected. Applicants have provided evidence in the two Jaffee Declarations, paragraph #4 d (i, ii, iii) of the first Declaration and paragraph 4 of the second Declaration, that the properties of the claimed mats, such as Taber Stiffness and passing the stated flammability test, were not inherent in prior art mats, and the Examiner has not provided any evidence to support the allegation of inherency, see *In re Dembiczak*, 175 F. 3d 994, 50 USPQ 2d 1614 (Fed. Circuit 1999), for principle that the Examiner must have actual evidence from the prior art to support alleged suggestions to modify references, and *In re Soni*, 34 USPQ 2d 1634. (Fed. Circuit, 1995), *In re Jones*, 21 USPQ2d 1941 (Fed. Circuit, 1992) and *In re Gordon*, 221 USPQ 1127, 1783, for the principles that a showing of substantially improved results for the invention, and statements that the results were unexpected should suffice to establish unexpected results absent evidence to the contrary and that there must be a suggestion in the references of the desirability of combining the teachings of the references. Also see 182 USPQ 291, (CCPA, 1974) for principle that a prior art teaching of a broad range does not make obvious a narrower range if the narrow range produces much better results or properties than taught by the reference for the broad range. Once the

applicants have provided evidence showing that the inherency alleged by the Examiner is wrong, the burden then shifts to the Examiner to show that inherency does in fact exist. Further, the first Rule 1.132 Declaration by Alan Jaffee, an expert in nonwoven mat technology, has stated in paragraph No. 4 (a) that, even with his training and experience, it took him more than 100 different trials and more than 54 days to find a combination of materials and mat characteristics to find a mat and a suitable range of mat parameters that performed successfully as a collapsible web divider in the ceiling tile described in the published patent application cited just above. These facts are strong evidence that establish a prima facie case of non-obviousness, i.e. that the claimed mats were not "obvious to one of ordinary skill in the art at the time the invention was made".

What evidence has the Examiner presented that proves otherwise?

10) There are dozens and dozens of binders known for bonding glass and polymer fibers together to form nonwoven mats, but nothing to suggest to one of ordinary skill that the binder of the Arkens et al type would produce the properties critical to performing well in the collapsible dividers in the compressible ceiling tile described above, thus no reasonable expectation of success. Aside from there being no motivation for the skilled artisan to modify the inventive mats of Jaffee with the teachings of Arkens et al for the reasons described above, there is no indication in these references that doing so would produce the mats having the particular combination of characteristics and properties that produce the excellent flex and recovery properties after having been scored and folded that makes these mats perform in a superior manner as dividers in the compressible ceiling tiles. Nothing in either Jaffee or Arkens et al suggest this result or these properties. Nothing cited by the Examiner suggests such mats as claimed or mats having the combination of properties claimed, so there would have been no motivation to modify the mats of Jaffee, particularly since modification would also involve risk and wasted money and time in view of the unpredictability of how a completely different type of binder, basis weight, thickness, composition of fiber blend, etc. would affect the properties of the mats. The '846 Jaffee invention, the Arkens et al inventions and the presently claimed invention are all of a chemical or materials science nature and as such are of an unpredictable nature and the effects of fiber sizes, fiber types, ratios of different fibers, mat thicknesses, basis weights and amount and type of binder are also largely unpredictable, and especially so when changing two or more of these variables at the same time, which the Examiner is urging would have been obvious to do. As the acts of an expert in this art, Jaffee, evidences in his Rule 1.132 Declaration filed

earlier, because of such unpredictability, he tried more than 100 of such combinations over a period of more than 54 days before finding suitable combinations and properties for making the claimed mats. **This is extremely strong evidence that the invention, nonwoven mats not requiring the costly glass microfibers previously required in one or more mats found suitable for the compressible ceiling tile, was not obvious to one of ordinary skill.** Further evidence that Jaffee is an expert in the nonwoven mat art is the fact that he is an inventor or co-inventor of ten US patents as evidenced by Exhibit 2, also filed earlier. **For the Examiner to dismiss or ignore such evidence is still further evidence that the rejection is an improper hindsight rejection.**

11) Additionally, the application that the mats of the invention were designed for are for ceiling tiles of the type disclosed in US. Pat. App. No. 2002020142 as pointed out in the specification. In that patent application, the mats that were said to perform as the dividers, i.e. the mats that have to be scored and folded and then have the properties that will cause the ceiling tile to spring back into the proper thickness after having been compressed for storing and shipping and storing awaiting use, were mats disclosed in three patents owned by the assignee of the present invention, particularly US 5,840,413 and 5,942,288. The mats taught in those patents contained expensive glass microfibers, i.e. having diameters below 5 microns, and bound with a melamine formaldehyde binder. **Glass microfibers cost at least double per pound compared to the 13 – 17.5 micron fibers used in the claimed mats.** The mats of the present invention do not require the presence of fine glass fibers to meet the requirements for the dividers in the ceiling tile and **that is a further unexpected result of the combinations claimed.** The Examiner urges that since the claimed invention are mats and not ceiling tiles, that the properties required in the mats to be used in the ceiling tiles is irrelevant. Some of the present claims now clearly state that the claimed mats are useful **as the scored and folded vertical webs spanning between an exposed mat and a backer mat in a compressible ceiling tile (some claims specifically describing as disclosed in published U. S. Patent Application No. 20020020142 filed April 23, 2001), including the ability to, after being scored, folded, and compressed, to spring back to the original shape and orientation** and thus have the characteristics required for that application, something that none of Jaffee or Arkens et al disclose or reasonably suggest to one of ordinary skill in the art. Applicants have shown how difficult it was to invent mats having the properties necessary for this new type of ceiling tile and those properties were not known in prior art mats. This new type of ceiling tile could not be as cost competitive and be as

commercially desirable until the mats of the claimed invention were invented. Applicants have presented evidence to support the importance of these mat properties and the Examiner has provided no evidentiary basis for urging that these properties are inherent in the mats of Jaffee. The claimed mats advance the art of nonwoven mats in an unobvious way and as such meet the requirements of 35 USC 103. The Examiner seems to be ignoring this evidence of non-obviousness and if so, is improper.

For the above reasons applicant believes that the present claims are patentable under 35 USC 103 and respectfully requests the Examiner to withdraw this rejection and to allow all of the claims.

Applicants believe that the claims are in condition for allowance, but if the Examiner believes one or more issues still exist, to expedite disposal of this application the Examiner is respectfully invited to call Applicants' attorney at the number listed below to discuss the issue or issues and a way of removing.

Respectfully submitted,


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